

WHAT IS CLAIMED IS:

1. An image processing apparatus comprising:
  - image obtaining unit, adapted to obtain image data from a recording medium on which the image data
  - 5 has been recorded;
  - face region extraction unit, adapted to extract a face region of a person from the image data obtained by said image obtaining unit;
  - image feature amount calculation unit, adapted
  - 10 to calculate an image feature amount of the face region extracted from the image data by said face region extraction unit;
  - correction effect inference unit, adapted to infer whether or not a correction effect can be
  - 15 obtained by correcting a characteristic of the image data, based on the image feature amount calculated by said image feature amount calculation unit, and to output a first inference result based on the inference; and
  - 20 image correction unit, adapted to, in a case where it is inferred by said correction effect inference unit that the correction effect can be obtained based on the first inference result, correct the characteristic of the image data based on the
  - 25 image feature amount and thus output post-correction image data.

2. An image processing apparatus according to Claim 1, wherein

a photographing apparatus for photographing a subject and thus obtaining the image data includes plural kinds of photographing modes, a person mode which is optimum to photograph the person is included in the plural kinds of photographing modes, and, in a case where photographing information including information concerning the photographing mode has been recorded together with the image data on the recording medium, said image obtaining unit obtains the photographing information together with the image data from the recording medium, and

said image processing apparatus further comprises

photographing mode discrimination unit, adapted to discriminate whether or not the photographing mode included in the photographing information obtained by said image obtaining unit is the person mode, and correction process control unit, adapted to, only in a case where it is discriminated by said photographing mode discrimination unit that the photographing mode is the person mode, control said face region extraction unit, said image feature amount calculation unit, said correction effect inference unit and said image correction unit to perform a correction process of the image data.

3. An image processing apparatus according to Claim 1, wherein said image feature amount calculation unit calculates at least an area of the face region as the image feature amount, and

5       said correction effect inference unit infers the correction effect from the area of the face region calculated by said image feature amount calculation unit and thus outputs the first inference result.

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4. An image processing apparatus according to Claim 1, further comprising face region correction unit, adapted to, in a case where it is inferred by said correction effect inference unit that the

15       correction effect can be obtained based on the first inference result, correct a characteristic of the face region and thus output post-correction face region data by using the image feature amount of the face region,

20       wherein said image feature amount calculation unit further calculates a post-correction image feature amount being an image feature amount of the post-correction face region data output by said face region correction unit,

25       said correction effect inference unit further infers whether or not the correction effect can be obtained and thus outputs a second inference result,

by comparing the image feature amount before the correction with the post-correction image feature amount after the correction both calculated from the same face region by said image feature amount

5 calculation unit and then correcting the compared result, and

in a case where it is inferred by said correction effect inference unit that the correction effect can be obtained based on the second inference  
10 result, said image correction unit corrects the characteristic of the image data based on the image feature amount and then outputs the post-correction image data.

15 5. An image processing apparatus according to Claim 4, wherein the image feature amount and the post-correction image feature amount are statistical distributions of pixel data in the face region.

20 6. An image processing apparatus according to Claim 5, wherein the statistical distribution of the pixel data is a lightness histogram indicating a distribution of lightness of each pixel or a hue histogram indicating a distribution of hue of each  
25 pixel.

7. An image processing apparatus according to

Claim 4, wherein said image correction unit corrects the characteristic of the image data by using a parameter used in the correction by said face region correction unit.

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8. An image processing method comprising:

a first step of obtaining image data from a recording medium on which the image data has been recorded;

10 a second step of extracting a face region of a person from the image data obtained in said first step;

a third step of calculating an image feature amount of the face region extracted from the image data in said second step;

15 a fourth step of inferring whether or not a correction effect can be obtained by correcting a characteristic of the image data, based on the image feature amount calculated in said third step, and of outputting a first inference result based on the inference; and

a fifth step of, in a case where it is inferred in said fourth step that the correction effect can be obtained based on the first inference result,

25 correcting the characteristic of the image data based on the image feature amount and thus outputting post-correction image data.

9. An image processing method according to Claim 8, further comprising:

a face region correction step of, in a case where it is inferred in said fourth step that the  
5 correction effect can be obtained based on the first inference result, correcting a characteristic of the face region and thus outputting post-correction face region data by using the image feature amount of the face region;

10 a feature amount calculation step of calculating a post-correction image feature amount being an image feature amount of the post-correction face region data output in said face region correction step; and

15 a correction effect inference step of inferring whether or not the correction effect can be obtained and thus outputting a second inference result, by comparing the image feature amount before the correction with the post-correction image feature  
20 amount after the correction both calculated from the same face region respectively in said second step and said image feature amount calculation step and then correcting the compared result,

wherein, in a case where it is inferred in said  
25 correction effect inference step that the correction effect can be obtained based on the second inference result, said fifth step corrects the characteristic

of the image data based on the image feature amount and then outputs the post-correction image data.

10. A computer-readable recording medium which  
5 records a program for causing a computer to execute:

a first step of obtaining image data from a recording medium on which the image data has been recorded;

a second step of extracting a face region of a  
10 person from the image data obtained in said first step;

a third step of calculating an image feature amount of the face region extracted from the image data in said second step;

15 a fourth step of inferring whether or not a correction effect can be obtained by correcting a characteristic of the image data, based on the image feature amount calculated in said third step, and of outputting a first inference result based on the  
20 inference; and

a fifth step of, in a case where it is inferred in said fourth step that the correction effect can be obtained based on the first inference result, correcting the characteristic of the image data based  
25 on the image feature amount and thus outputting post-correction image data.

11. A computer-readable recording medium according to Claim 10, further recording a program for causing the computer to execute:

a face region correction step of, in a case  
5 where it is inferred in said fourth step that the correction effect can be obtained based on the first inference result, correcting a characteristic of the face region and thus outputting post-correction face region data by using the image feature amount of the  
10 face region;

a feature amount calculation step of calculating a post-correction image feature amount being an image feature amount of the post-correction face region data output in said face region  
15 correction step;

a correction effect inference step of inferring whether or not the correction effect can be obtained and thus outputting a second inference result, by comparing the image feature amount before the  
20 correction with the post-correction image feature amount after the correction both calculated from the same face region respectively in said second step and said image feature amount calculation step and then correcting the compared result; and

25 an output step of, in a case where it is inferred in said correction effect inference step that the correction effect can be obtained based on



the second inference result, correcting the characteristic of the image data based on the image feature amount and then outputting the post-correction image data.

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12. A program for causing a computer to execute:

a first step of obtaining image data from a recording medium on which the image data has been  
10 recorded;

a second step of extracting a face region of a person from the image data obtained in said first step;

a third step of calculating an image feature  
15 amount of the face region extracted from the image data in said second step;

a fourth step of inferring whether or not a correction effect can be obtained by correcting a characteristic of the image data, based on the image  
20 feature amount calculated in said third step, and of outputting a first inference result based on the inference; and

a fifth step of, in a case where it is inferred in said fourth step that the correction effect can be  
25 obtained based on the first inference result, correcting the characteristic of the image data based on the image feature amount and thus outputting post-

correction image data.

13. A program according to Claim 12, for further causing the computer to execute:

5           a face region correction step of, in a case where it is inferred in said fourth step that the correction effect can be obtained based on the first inference result, correcting a characteristic of the face region and thus outputting post-correction face  
10   region data by using the image feature amount of the face region;

          a feature amount calculation step of calculating a post-correction image feature amount being an image feature amount of the post-correction  
15   face region data output in said face region correction step;

          a correction effect inference step of inferring whether or not the correction effect can be obtained and thus outputting a second inference result, by  
20   comparing the image feature amount before the correction with the post-correction image feature amount after the correction both calculated from the same face region respectively in said second step and said image feature amount calculation step and then  
25   correcting the compared result; and

          an output step of, in a case where it is inferred in said correction effect inference step

that the correction effect can be obtained based on the second inference result, correcting the characteristic of the image data based on the image feature amount and then outputting the post-  
5 correction image data.